

REMARKS

I. Introduction

Claims 1-26 are currently pending and stand rejected as being anticipated by Hegstad (US 2,778,687). Applicants have amended independent claims 1, 15, and 21 to recite "each of said ramps having a flow guiding surface facing in substantially the same direction." As explained in further detail below, Hegstad does not disclose or suggest this feature. In further support of this Amendment, Applicants also submit a Second Declaration of Inventor Christian T. Gregory. Thus, Applicants respectively requests reconsideration and allowance of all claims.

Applicants also have amended the specification to indicate that the present application is a continuation-in-part of US D486,884. In support of this priority claim, Applicants submit a Petition for an Unintentionally Delayed Claim for Priority (a copy attached hereto in an Appendix). Also in connection of this application, Applicants submit a Request for Continued Examination Under 37 C.F.R. § 1.114 and a Second Supplemental Information Disclosure Statement.

II. Rejections under 35 U.S.C. § 102(a)

Claims 1-26 stand rejected as being anticipated by Hegstad. Applicants respectfully disagree with the characterization in the Office Action that Hegstad discloses a spray nozzle with the claimed discrete ramps formed at the lower margin of the nozzle outlet that extend forwardly and downwardly therefrom, as well as the Office Action's broad definition of margin. Nevertheless, Applicants have amended each of the independent claims to further distinguish the claimed invention over Hegstad. As mentioned above, each independent claim now recites: "each of said ramps having a flow guiding surface facing in substantially the same direction."

Under no reasonable characterization of Hegstad do any of the nozzle surfaces face in substantially the same direction. As plainly shown in the figures in Hegstad and the 3D computer models of the Hegstad nozzle as provided in the

Declaration of Christian T. Gregory dated November 11, 2005, the surfaces 29 and 31, that are being characterized as the claimed ramps, face each other and angle into the nozzle opening. They certainly, however, do not face in substantially the same direction.

Moreover, independent claims 15 and 21 include further limitations plainly not disclosed or suggested by Hegstad. For example, independent claim 15 also requires that the nozzle outlet be "shaped generally at an inboard side thereof for laterally converging water flowing through said nozzle outlet." Independent claim 21 also requires the nozzle outlet to include "laterally converging tapered transition surfaces formed generally at an upstream side thereof and at opposite sides of the nozzle outlet." We respectfully note that none of the previous Office Actions in connection with this application has indicated that Hegstad discloses these features.

Accordingly, Applicants respectively request a determination that claims 1-26, as amended, are in condition for allowance.

III. Dependent Claims 2-14, 16-20, and 22-26

Hegstad plainly does not disclose any of the additional features recited in the dependent claims. Indeed, we again respectfully note that none of the prior Office Actions in connection with this application have indicated that Hegstad discloses the additional features recited in the dependent claims.

For example, Hegstad fails to disclose at least the following additional features recited in claims depending from independent claim 1:

- Dependent claims 2-4 require the ramps to have different declination angles. Hegstad's surfaces 29 and 31 are mirror image surfaces on opposite sides of the nozzle outlet. These mirror image surfaces have the same declination angle.

- Dependent claim 6 requires the ramps to be arranged in a side-by-side array spanning substantially the entire width of the lower margin. As illustrated in FIG. 3, Hegstad's surfaces 29 and 31 are not side-by-side.
- Dependent claim 7 requires the nozzle outlet to have a shape to form a substantially collimated spray pattern. As clearly shown in FIG. 1 of Hegstad, there is no shape to project a collimated spray pattern.
- Dependent claims 8-9 require means formed generally at an upstream side for laterally converging water flow. Hegstad does not disclose this feature.
- Dependent claims 10, 11, and 13 require laterally converging tapered transition surfaces. Hegstad does not disclose this feature.
- Dependent claims 11 and 13 further require an upstream end of the ramps to be disposed at least a distance downstream from an upstream end of the laterally converging tapered transition surfaces. Hegstad does not disclose this feature.
- Dependent claim 12 requires a generally straight lower margin. Hegstad clearly does not disclose a generally straight lower margin (*see* FIGS. 2 and 5).

The claims depending from independent claim 15 (dependent claims 16-20) and independent claim 21 (dependent claims 22-26) also recite similar additional limitations.

Thus, not only are the dependent claims allowable because they depend from allowable independent claims, they are also allowable because they recite further limitations that Hegstad also fails to disclose.

**IV. Second Supplemental Information Disclosure Statement and
Second Declaration of Christian T. Gregory**

The Second Supplemental Information Disclosure Statement ("IDS") cites two design patents (US D415,415 and US D458,342) to spray nozzle trees and literature disclosing a commercial embodiment of the '415 patent. The photograph included in the Second Supplemental IDS depicts a commercial embodiment of the nozzle tree illustrated in FIG. 3 of the '415 patent.

To expedite prosecution of this application to allowance, Applicants wish to briefly point out some differences between independent claims 1, 15, and 21 and the spray nozzle of the '415 patent. For example, FIG. 3 of the '415 patent discloses spray nozzles having ramps with an upstream end disposed at the front face rather than at least a distance upstream relative to the front face, as claimed in each of the independent claims. The upstream positioning of the ramp ends improves the close-in watering capabilities of the spray nozzle due to an increased pressure drop at the upstream end of the ramps. For example, the positioning of the upstream end of the ramps and the accompanying pressure drop is disclosed in Applicants' application in FIGS. 8 and 9, as well as paragraph [0029], for the preferred embodiment:

In this regard, it is believed that positioning of the upstream or inboard ends of the ramps 18 at a location disposed upstream relative to the front plane 58 of the nozzle faceplate 44, but at least slightly downstream relative to initial water flow convergence to produce the vertical fan pattern 40, results in a rapid pressure reduction in the vicinity of the lower margin 52 of the nozzle outlet 46, to enhance the formation of this desired small and relatively fine water droplets which is forced and guided downwardly by the ramps 18.

In addition, one of the inventors, Christian T. Gregory, has described in his declaration a comparative test and results and photographs of the fluid spray from one exemplary embodiment of the claimed spray nozzle (Nozzle A) showing dramatically improved results in close-in watering capabilities over the nozzle

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design illustrated in FIG. 3 of the '415 patent (Nozzle B). That is, for example, by positioning the upstream end of the ramps a distance upstream from the front face of the nozzle, the tested embodiment of the claimed spray nozzle (Nozzle A) is capable of providing close-in watering within about 6 inches of the nozzle, while the prior design with the upstream end of the ramps at the nozzle front face was only able to provide close-in watering about 18 inches from the spray nozzle. This improvement is significant.

V. Conclusion

Based on the foregoing, Applicants respectively request reconsideration and allowance of claims 1-26.

The Commissioner is hereby authorized to charge any additional fees which may be required with respect to this communication, or credit any overpayment, to Deposit Account No. 06-1135.

Respectfully submitted,
FITCH, EVEN, TABIN & FLANNERY

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